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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHEN, CHONGSHAN

ART UNIT PAPER NUMBER

2162

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,290

Applicant(s)

MODELSKI ET AL.

Examiner

Chongshan Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-30 are pending in this Office Action.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106 IV. B.2. (b)

A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. *Schrader*, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application within the technological arts.

Claims 1-10, in view of the above cited MPEP section, are not statutory because they merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application within the technological arts. The use of a computer has not been indicated.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 12-16 of U.S. Patent No. 6,633,880 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because following reasons:

Claim 1 of the instant application substantially recites the limitations of claim 12 of US Patent 6,633,880 B1. The claim merely omits certain the underlined limitations and replaces the bolded limitations as shown in the comparison table 1 below.

Instant Application Claim 1	US Patent 6,633,880 B1 Claim 12
<p>1. A method for performing a radix search data structure comprising:</p> <p style="padding-left: 40px;">selecting a reference table based on a value of a selectable parameter, the reference table containing a set of data bits;</p> <p style="padding-left: 40px;">receiving a key containing a set of data bits;</p> <p style="padding-left: 40px;">indexing the reference table using at least a subset of data bits in the key;</p> <p style="padding-left: 40px;">determining a result index based on at least a subset of data bits in the reference table; and</p>	<p>12. An apparatus for performing a radix search of a data structure, the data structure comprising a plurality of filter values, the apparatus comprising:</p> <p style="padding-left: 40px;">a key comprised of a set of data bits,</p> <p style="padding-left: 40px;">a reference table, coupled to the key;</p> <p style="padding-left: 40px;">and a result table, coupled to the reference table and the key; and</p> <p style="padding-left: 40px;">a processor configured</p> <p style="padding-left: 80px;"><u>to determine a reference index based on a first subset of data bits in the key, wherein the</u></p>

<p>indexing a result table based on the result index to reference a result of a radix search data structure, wherein the reference table includes at least one of a valid reference table and a transition reference table.</p>	<p><u>reference index is based on a pointer field for a radix 4 search tree lookup,</u> to index the reference table based on the reference index to locate a reference field, to determine a result index based on a second subset of data bits in the key and the reference field, and to index the result table based on the result index to locate a filter value, the filter value indicative of a set of filter operations associated with the key.</p>
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Table 1

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated claim 12 of the US Patent since the omission and addition of the cited limitations would have not changed the process according to which the method for performing a radix search data structure. Therefore, the ordinary skill artisan would have been also motivated to modify claim 12 of the cited US patent by deleting “determining a reference index based on a first subset of data bits in the key, wherein the reference index is based on a pointer field for a radix 4 search tree lookup”. The cited omitting elements would not interfere with the functionality of the steps previously claimed and would perform the same function. In re Karlson, 136 USPQ 184 (CCPA 1963).

The dependent claims 2-10 of the instant application are rejected for fully incorporating the errors of their respective base claims by dependency.

Claims 11-30 are rejected on grounds corresponding to the reasons given above for claims 1-10.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 4 recites the limitation "the selectable parameter" in line 1. There is insufficient antecedent basis for this limitation in the claim.
8. Claim 9 recites the limitation "the result of the radix search tree lookup" in line 4. There is insufficient antecedent basis for this limitation in the claim.
9. Please correct other lack of antecedent basis problems in other claims.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Peters et al. (hereinafter "Peters", US 6,292,795 B1).

As per claim 1, Peters discloses a method for performing a radix search data structure comprising:

selecting a reference table based on a value of a selectable parameter, the reference table containing a set of data bits (Peters, Fig. 2A & 2B, col. 8, line 1 – col. 9, line 67);

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receiving a key containing a set of data bits (Peters, col. 15, lines 10-28);

indexing the reference table using at least a subset of data bits in the key (Peters, col. 15, lines 10-28);

determining a result index based on at least a subset of data bits in the reference table (Peters, col. 9, line 64 – col. 10, line 8); and

indexing a result table based on the result index to reference a result of a radix search data structure (Peters, col. 3, line 1 – col. 4, line 65),

wherein the reference table includes at least one of a valid reference table and a transition reference table (Peters, col. 3, line 1 – col. 4, line 65).

As per claim 2, Peters teaches all the claimed subject matters as discussed in claim 1, and further teaches the radix search data structure comprises a radix search tree lookup (Peters, col. 3, line 66 – col. 4, line 18).

As per claim 3, Peters teaches all the claimed subject matters as discussed in claim 2, and further teaches the reference table comprises at least one entry in a memory (Peters, Fig. 2A & 2B, col. 8, line 1 – col. 9, line 67).

As per claim 4, Peters teaches all the claimed subject matters as discussed in claim 2, and further teaches the selectable parameter comprises a selectable bit (Peters, col. 9, line 53 – col. 10, line 65).

As per claim 5, Peters teaches all the claimed subject matters as discussed in claim 2, and further teaches computing an offset value to a pointer field (Peters, col. 9, lines 53 – col. 10, line 65).

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As per claim 6, Peters teaches all the claimed subject matters as discussed in claim 5, and further teaches computing a sum of data bits having a user specified state in the subset of data bits in the reference table (Peters, col. 7, line 21 – col. 8, line 67).

As per claim 7, Peters teaches all the claimed subject matters as discussed in claim 6, and further teaches the subset of data bits in the reference table is based on a data bit position of an index to the reference table (Peters, col. 7, line 21 – col. 8, line 67).

As per claim 8, Peters teaches all the claimed subject matters as discussed in claim 5, and further teaches the pointer field comprises an address of an entry of a memory (Peters, col. 2, line 65 – col. 3, line 65).

As per claim 9, Peters teaches all the claimed subject matters as discussed in claim 2, and further teaches the result table comprises at least one entry in a memory, the at least one entry including at least one of a continue parameter, a selectable parameter, and a pointer field, the continue parameter indicating whether the at least one entry comprises the result of the radix search tree lookup (Peters, col. 3, line 1 – col. 4, line 65).

As per claim 10, Peters teaches all the claimed subject matters as discussed in claim 2, and further teaches the radix search tree lookup comprises radix 4 search tree lookup (Peters, col. 7, lines 21 – col. 8, line 67).

Claims 11-30 are rejected on grounds corresponding to the reasons given above for claims 1-10.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is (571) 272-4031.

The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chongshan Chen
June 12, 2005


JEAN M. CORRIELLUS
PRIMARY EXAMINER